

ABSTRACT

This invention provides a system for producing differentiated cells from a stem cell population for use wherever a relatively homogenous cell population is desirable. The cells contain an effector gene under control of a transcriptional control element (such as the TERT promoter) that causes the gene to be expressed in relatively undifferentiated cells in the population. Expression of the effector gene results in expression of a cell-surface antigen that can be used to deplete the undifferentiated cells. Model effector sequences encode glycosyl transferases that synthesize carbohydrate xenoantigen or alloantigen, which can be used for immunoseparation or as a target for complement-mediated lysis. The differentiated cell populations produced are suitable for use in tissue regeneration and non-therapeutic applications such as drug screening.